FIG. 1

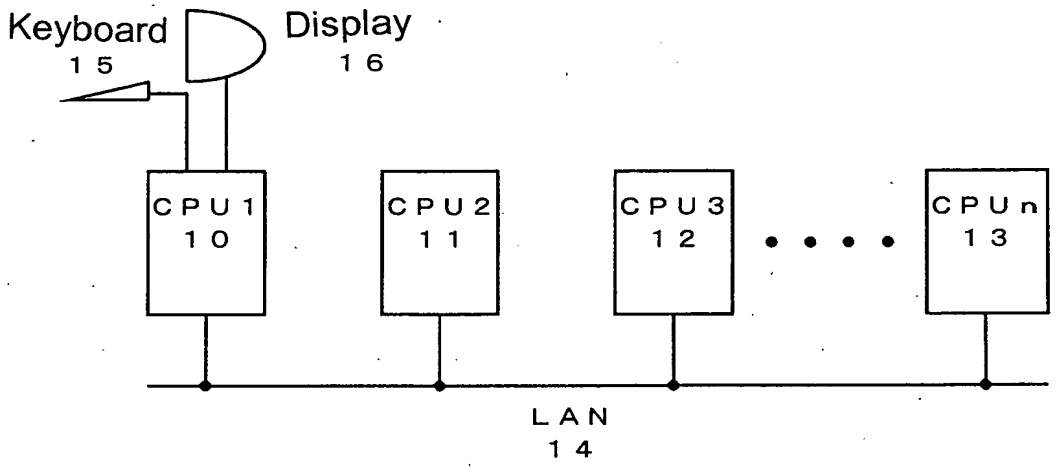


FIG. 2

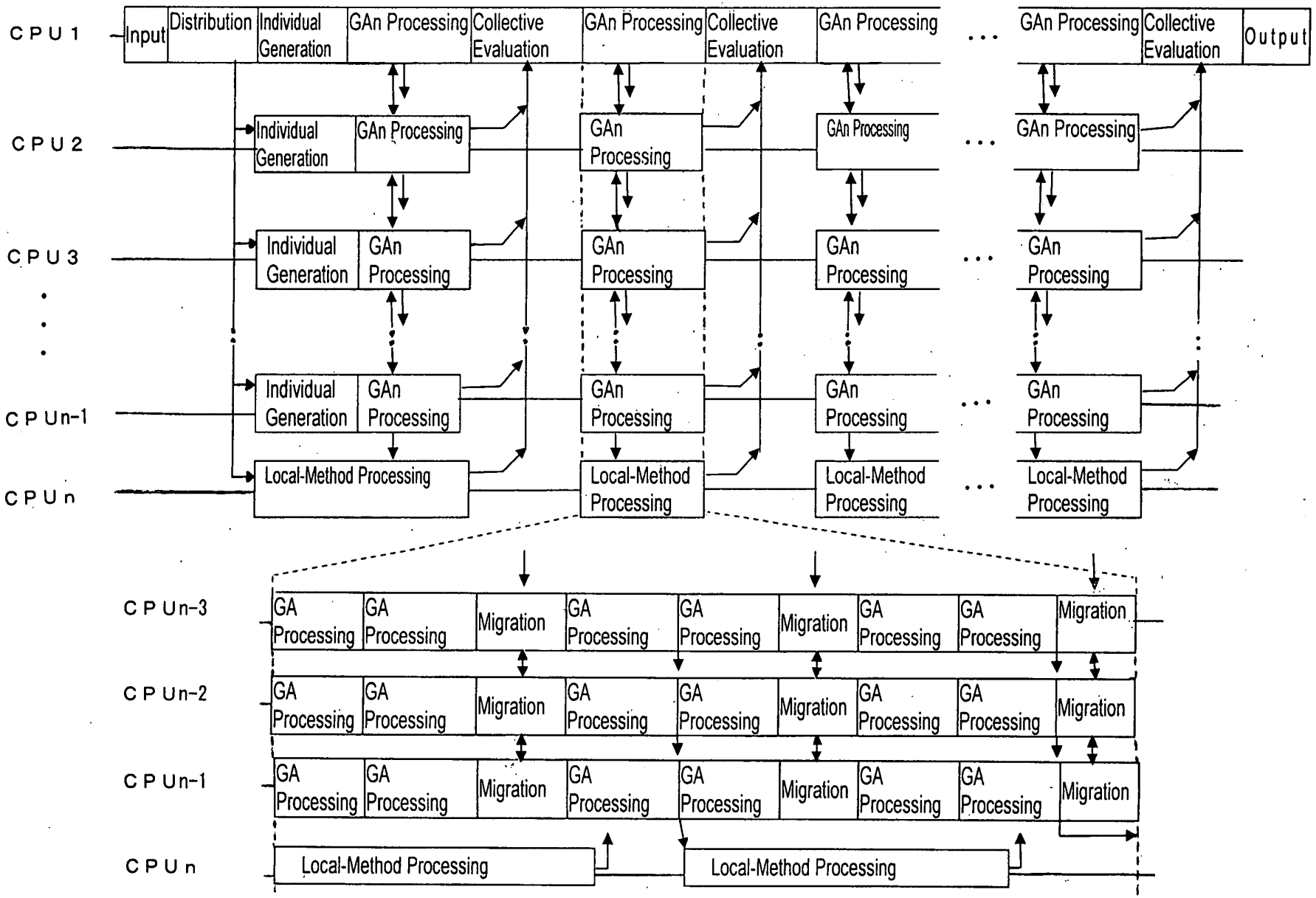

CPU 1
Input
Distribution
Individual Generation
GAn Processing
Collective Evaluation
GAn Processing
Collective Evaluation
GAn Processing
GAn Processing
Collective Evaluation
Output
CPU 2
Individual Generation
GAn Processing
GAn Processing
GAn Processing
GAn Processing
CPU 3
Individual Generation
GAn Processing
GAn Processing
GAn Processing
GAn Processing
CPU n-1
Individual Generation
GAn Processing
GAn Processing
GAn Processing
GAn Processing
CPU n
Local-Method Processing
Local-Method Processing
Local-Method Processing
Local-Method Processing
CPU n-3
GA Processing
GA Processing
Migration
GA Processing
GA Processing
Migration
GA Processing
GA Processing
Migration
CPU n-2
GA Processing
GA Processing
Migration
GA Processing
GA Processing
Migration
GA Processing
GA Processing
Migration
CPU n-1
GA Processing
GA Processing
Migration
GA Processing
GA Processing
Migration
GA Processing
GA Processing
Migration
CPU n
Local-Method Processing
Local-Method Processing

FIG. 3

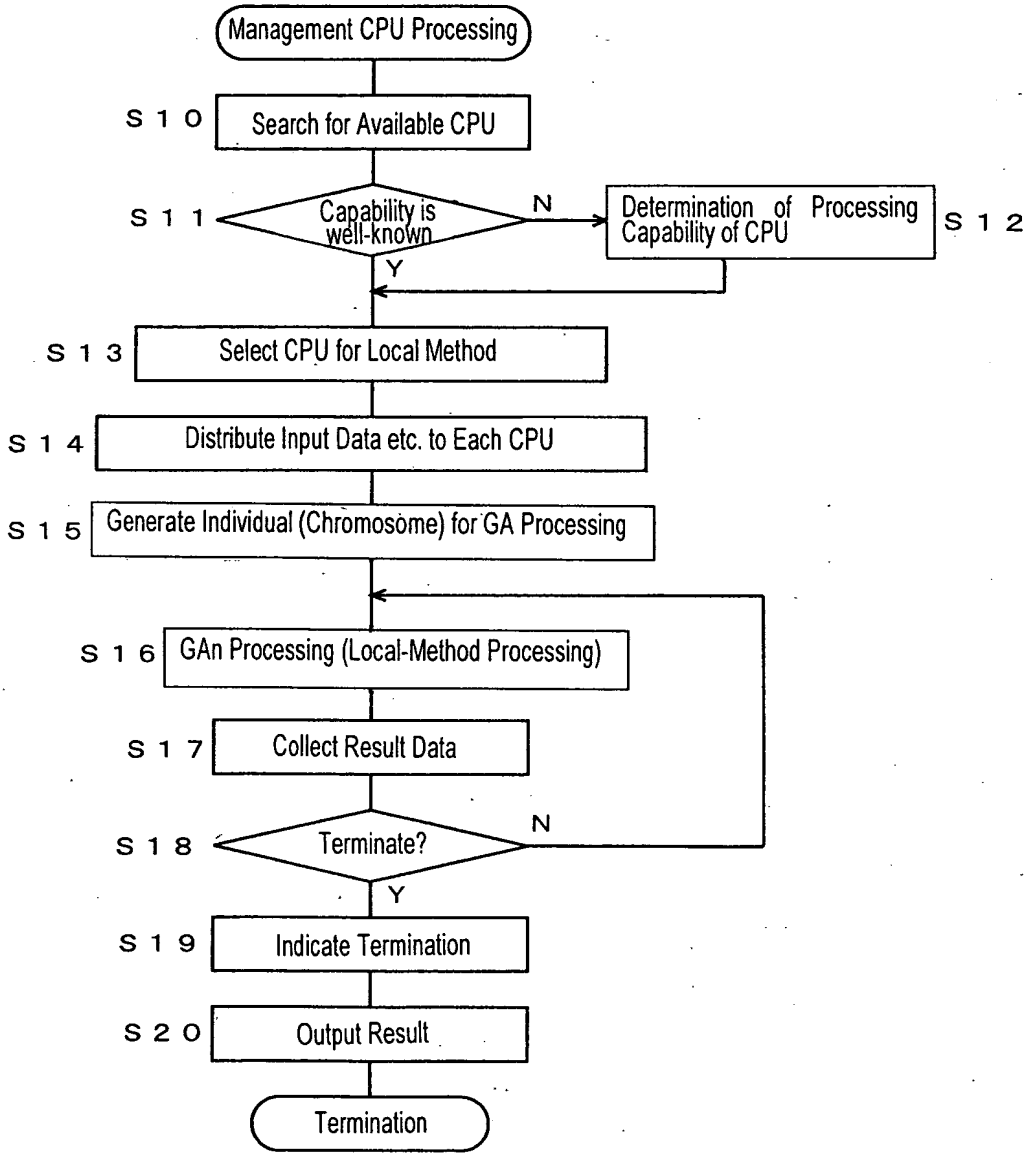

Management CPU Processing
S10
Search for Available CPU
S11
Capability is well-known
N
Determination of Processing Capability of CPU
S12
Y
S13
Select CPU for Local Method
S14
Distribute Input Data etc. to Each CPU
S15
Generate Individual (Chromosome) for GA Processing
S16
GAn Processing (Local-Method Processing)
S17
Collect Result Data
S18
Terminate?
N
Y
S19
Indicate Termination
S20
Output Result
Termination

FIG. 4

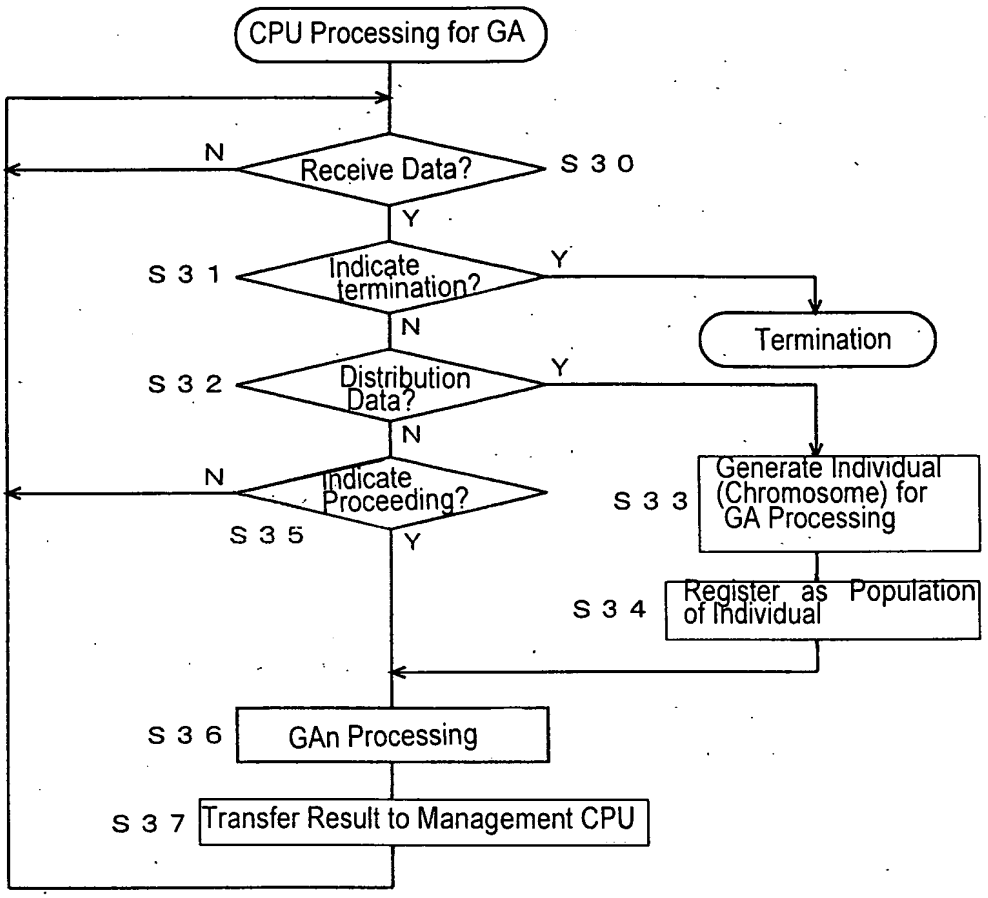

CPU Processing for GA
Receive Data?
S 3 0
N
Y
S 3 1
Indicate termination?
Y
N
Termination
S 3 2
Distribution Data?
Y
N
N
Indicate Proceeding?
S 3 5
Y
S 3 3
Generate Individual (Chromosome) for GA Processing
S 3 4
Register as Population of Individual
S 3 6
GAn Processing
S 3 7
Transfer Result to Management CPU

FIG. 5

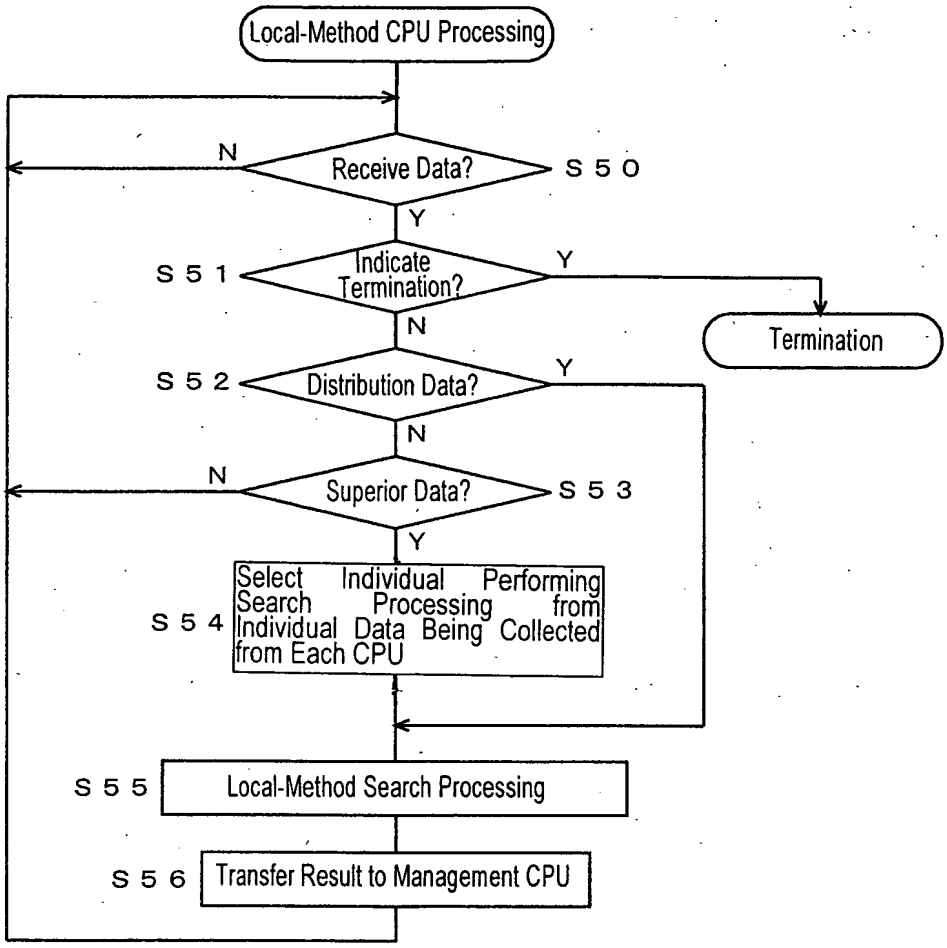
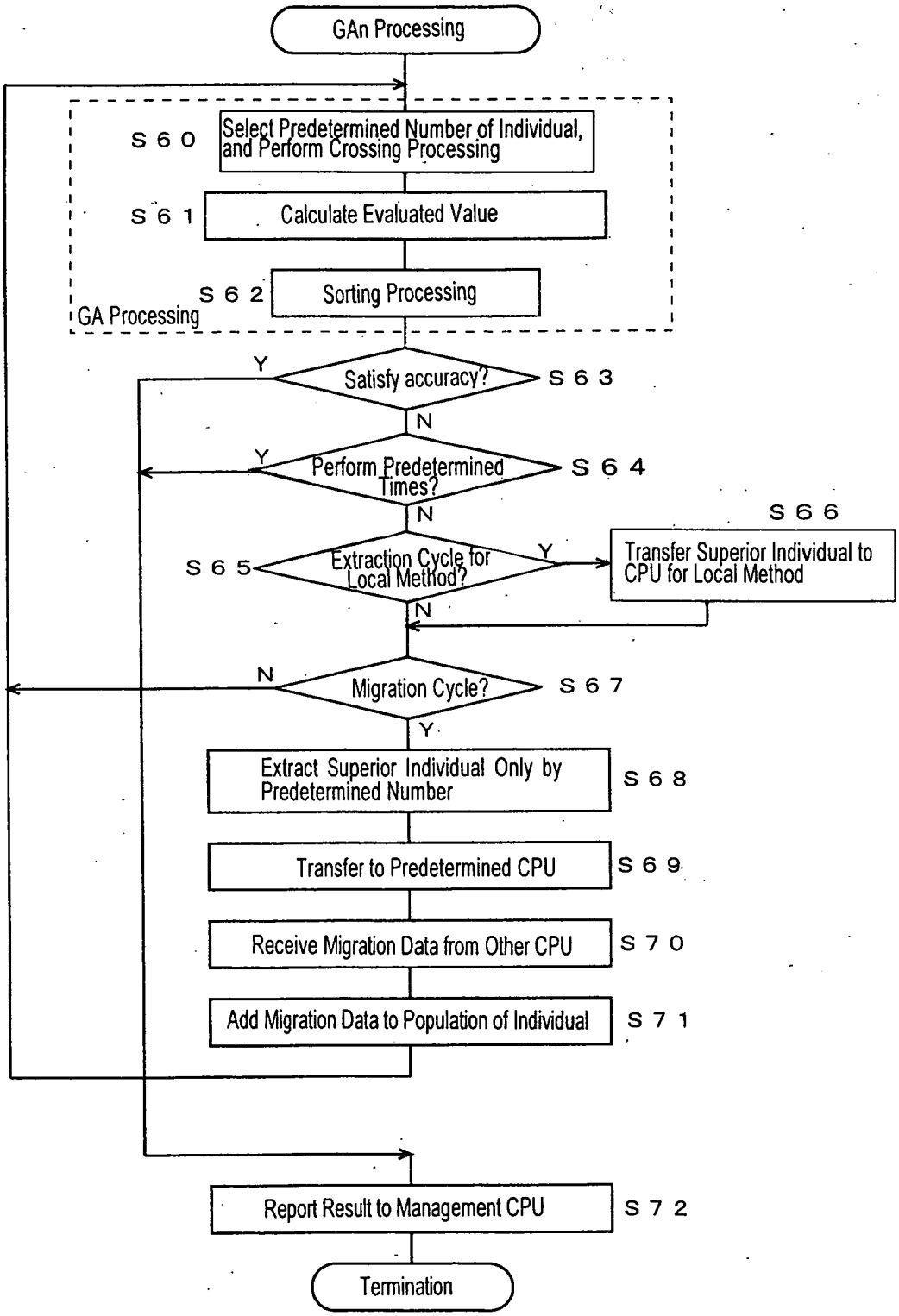

Local-Method CPU Processing
Receive Data?
S 5 0
N
Y
S 5 1
Indicate Termination?
Y
Termination
N
S 5 2
Distribution Data?
Y
N
N
Superior Data?
S 5 3
Y
S 5 4
Select Individual Performing Search Processing from Individual Data Being Collected from Each CPU
S 5 5
Local-Method Search Processing
S 5 6
Transfer Result to Management CPU

FIG. 6


GAn Processing
S 6 0
Select Predetermined Number of Individual, and Perform Crossing Processing
S 6 1
Calculate Evaluated Value
S 6 2
Sorting Processing
GA Processing
Y
Satisfy accuracy?
S 6 3
N
Y
Perform Predetermined Times?
S 6 4
N
S 6 6
S 6 5
Extraction Cycle for Local Method?
Y
Transfer Superior Individual to CPU for Local Method
N
N
Migration Cycle?
S 6 7
Y
Extract Superior Individual Only by Predetermined Number
S 6 8
Transfer to Predetermined CPU
S 6 9
Receive Migration Data from Other CPU
S 7 0
Add Migration Data to Population of Individual
S 7 1
Report Result to Management CPU
S 7 2
Termination